

Battery boost: US draws up new graphite supply chains, dimming import needs

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Evolving state-centric policies are restructuring the existing graphite supply chains as EV and battery makers are increasingly looking at North America to secure graphite supplies in the future

There are many topics debated in the lithium-ion battery category. For example, which cathode chemistry is most appropriate for which application be it nickel, cobalt, manganese or iron in varying ratios with lithium. Rarely up for debate, however, is the anode material. That's because it's almost always graphite.



Source: Getty Images

The problem for the auto industry is that the US government is trying to build a resilient electric vehicle (EV) supply chain that levers away mainland China's influence on the EV supply chain. When it comes to graphite, this is a big problem, albeit not insurmountable. Mainland China produced 77% of the world's graphite needs in 2023, with the US importing 42% of its graphite requirements from China. The US requirements get to the crux of the problem — it imported 84,000 metric tons of graphite, while consuming 76,000 metric tons, meaning its production is negligible.

This has never been a problem until the US introduced the 2022 Inflation Reduction Act, a program stacked high with incentives for companies to build local supply chains for EVs. This was further magnified on Dec. 1, 2023, when the US government released guidance on the foreign entity of concern (FEOC), which listed four countries — the People's Republic of China (PRC), the Russian Federation, the Democratic People's Republic of North Korea and the Islamic Republic of Iran. The mandate added a new layer of FEOC requirements, pulling away the eligibility of EVs powered by batteries made primarily in China or using materials that are extracted and/or processed in China from qualifying for federal tax credits of up to \$7,500.

Coincidentally on the same day, China imposed a temporary measure for companies exporting graphite. China's move is expected to hit the graphite supply to nations that are heavily dependent on it, including the US, Japan, South Korea, Europe and other regions. China also refines more than 90% of the graphite globally.

The response in North America has been lightning-fast. At least five high-profile developments over the last fortnight hint that the North American graphite supply chains are beginning to work.

- On Feb. 5, Westwater Resources signed its first graphite offtake agreement with South Korean battery manufacturer SK On to supply a total of 34,000 metric tons of natural graphite from its under-construction Kellyton, Alabama, plant.
- On Feb. 9, Panasonic Energy signed a binding offtake agreement with Australia's NOVONIX to procure synthetic graphite from its Tennessee plant.
- On the same day, another Australia-based natural graphite supplier Syrah Resources commenced operations at its 11.25 kiloton per annum (ktpa) natural graphite processing facility in Vidalia, Louisiana.
- This was followed by two big announcements by the Canadian mining company Nouveau Monde Graphite (NMG) on Feb. 15. It signed offtake agreements with General Motors (GM) and Panasonic Energy to supply 18,000 metric tons of anode active materials (AAM) per annum to each as well as raising new equity investments from both companies.

According to S&P Global Mobility, global demand for AAM materials, mainly graphite, will grow to 3,100 kilotons by 2030, from 790 kilotons in 2023. Particularly in North America, this demand will grow at a faster rate, with expected volumes to reach 620 kilotons in 2030 from 56 kilotons in 2023.

“The recent guidance on the FEOC designation disqualifies batteries that utilize materials produced in China at any stage of their processing. This stringent requirement has compelled American automobile and battery manufacturers to rush to secure their graphite supply from FEOC-qualified sources. However, the feasibility of decoupling from China remains uncertain due to China's extensive monopoly over the graphite supply chain, its cost competitiveness and the fact that most anode projects in North America are still in the developmental phase,” explains S&P Global Mobility’s senior research analyst Ali Adim.

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